Please amend the specification as follows:

In the Claims:

Please cancel non-elected claims 1-6 without prejudice.

7. (amended) A method for forming metallurgical connections between metal wires and bond pads positioned on integrated circuits having copper interconnecting metallization, comprising:

depositing seed metal to activate the surface of said copper metallization of said bond pads;

plating a layer of barrier metal that resists copper diffusion, by electroless deposition, said barrier metal and the thickness thereof coordinated such that said layer reduces the diffusion of copper at 250 °C by more than 80 % compared with the absence of said barrier metal;

plating a layer of a bondable metal, by electroless deposition, said bondable metal and the thickness thereof coordinated such that said layer reduces the diffusion of said barrier metal at 250 °C by more than 80 % compared with the absence of said bondable metal, thereby forming the outermost bondable metal layer of said bond pad; and

bonding one of said metal wires onto said outermost metal.

12. (amended) The method according to Claim 11 wherein said metal chloride is palladium chloride.

Please add the following new claims:

16. (new) A method for forming metallurgical connections between metal wires and bond pads positioned on integrated circuits having copper interconnecting metallization, comprising:

depositing seed metal to activate the surface of said copper metallization of said bond pads;

plating on said seed metal a barrier layer, by electroless deposition, said barrier layer having a thickness of at least about 0.5 μm, said barrier layer selected from a group consisting of nickel, cobalt, chromium, molybdenum, titanium, tungsten, and alloys thereof;

plating on said barrier layer a bondable layer, by electroless deposition, said bondable layer having a thickness of at least about 1.5 μm, said bondable layer selected from a group consisting of gold, palladium, platinum, and silver; and

bonding one of said metal wires onto said bondable layer.

17. (new) The method of Claim 16, wherein said step of plating on said barrier layer a bondable layer comprises the steps of:

conducting a self-limiting surface metal replacement; and

conducting an autocatalytic deposition.

18. (new) The method of Claim 16, wherein said step of plating on said seed metal a barrier layer comprises plating a barrier layer having a thickness in the range of about 0.5 μm to about 1.5 μm.

19. (new) The method of Claim 16, wherein said step of plating on said barrier layer a bondable layer comprises plating a bondable layer having a thickness in the range of about 0.4 μm to about 1.5 μm.

20. (new) The method of Claim 16, wherein said step of depositing seed metal is preceded by a step comprising:

depositing a protective overcoat over the surface of said integrated circuit, including the surface portions having copper metallization; and

opening selected areas of said overcoat, exposing the surface of said copper metallization.

21. (new) The method of Claim 20, further comprising the step of immersing said exposed surface of said copper metallization in an acid solution.

22. (new) A method for forming metallurgical connections between metal wires and bond pads positioned on integrated circuits having copper interconnecting metallization, comprising:

depositing palladium seed metal to activate the surface of said copper metallization of said bond pads;

plating on said seed metal a layer of nickel, by electroless deposition, said layer of nickel having a thickness of at least about 0.5 μm;

plating on said layer of nickel a layer of gold, by electroless deposition, said layer of gold having a thickness of at least about 1.5 μm; and

bonding one of said metal wires onto said layer of gold.

23. (new) The method of Claim 22, wherein said step of plating on said barrier layer a bondable layer comprises the steps of:

conducting a self-limiting surface metal replacement; and

conducting an autocatalytic deposition.

24. (new) The method of Claim 22, wherein said step of plating on said seed metal a barrier layer comprises plating a barrier layer having a thickness in the range of about 0.5 μm to about 1.5 μm.

25. (new) The method of Claim 22, wherein said step of plating on said barrier layer a bondable layer comprises plating a bondable layer having a thickness in the range of about 0.4 μm to about 1.5 μm.

26. (new) The method of Claim 22, wherein said step of depositing seed metal is preceded by a step comprising: